

### Patent Claims

1. A method of depositing compounds on a substrate by means of a metal organic gas phase deposition and a first mixture of at least one carrier gas and at least one metal organic and a second mixture of at least one carrier gas and at least one Group V compound or Group VI compound whereby both mixtures are separately fed into a MOCVD apparatus, characterized in that the first mixture of at least one carrier gas and at least one metal organic is fed into the apparatus between the substrate and the second mixture of at least one carrier gas and at least one Group V compound or Group VI compound.

2. The method according to the preceding claim, characterized in that for the first mixture at least one Group II compound is selected as the metal organic.

3. The method according to one of the preceding claims, characterized by dimethylzinc as the metal organic.

4. The method according to one of the preceding claims, characterized by (Ba, Sr) compounds as metal organics.

5. The method according to one of the preceding claims, characterized in that for the first mixture at least one Group III compound is selected as the metal organic.

6. The method according to one of the preceding claims, characterized by trimethylgallium and/or trimethylaluminum and/or trimethylindium as metal organics.

7. The method according to one of the preceding claims, characterized in that for the first mixture at least one Group IV compound is selected as the metal organic.

8. The method according to one of the preceding claims, characterized by titaniumisopropoxide as the metal organic.

9. The method according to one of the preceding claims, characterized in that  $\text{AsH}_3$ , and/or  $\text{PH}_3$ , and/or  $\text{NH}_3$ , is selected as the Group V compound.

10. The method according to one of the preceding claims, characterized in that oxygen or diethyltellurium is selected as the Group VI compound.

11. The method according to one of the preceding claims, characterized in that III/V compounds and/or II-VI compounds are deposited.

12. The method according to one of the preceding claims, characterized in that  $\text{GaN}$ ,  $\text{AlN}$  or  $\text{InN}$  or alloys of these compounds are deposited.

13. The method according to one of the preceding claims, characterized in that an oxide, especially (Ba, Sr) titanate is deposited.

14. The method according to one of the preceding claims, characterized in that hydrogen and/or nitrogen and/or argon is used as the carrier gas.

15. A MOCVD apparatus for gas phase deposition with at least two gas inlets (4, 5), characterized by means for flexibly introducing gases into the apparatus.

16. The MOCVD apparatus according to claim 15 characterized in that between the gas inlets (4, 5) and the supply vessels for the gases to be fed into the apparatus, gas collecting lines (51, 52, 53) are provided in which there are arranged at least two valves (V1, V2, V3).

17. The method according to one of claims 1 to 14 characterized in that the substrate is selected from SiC, sapphire, silicon, InP (indiumphosphide), InAs (indiumarsonide), GaAs (galliumarsenide), GaN (galliumnitride), AlN (aluminumnitride), GaSb (galliumantimonide) and/or GaP (galliumphosphide).

New Patent Claims **JC20 Rec'd PCT/PTO 20 SEP 2005**

---

1. MOCVD apparatus for gas phase deposition having at least two gas inlets (4, 5) and supply vessels for gasses to be admitted into the apparatus and a partition plate (1) compartmenting the apparatus, characterized by at least two 3/2 port position valves (3/2 way valves) (V1, V2, V3) in the gas collecting lines (51, 52, 53) between gas inlets (4, 5) and the supply vessel.

ALTERED PAGE